

WHAT IS CLAIMED IS:

1. A method for fabricating a semiconductor device including the step of forming a gate insulation film on a semiconductor substrate,

the method further comprising, before the step of forming the gate insulation film, the steps of:

forming an insulation film, covering a first side and a second side of the semiconductor substrate;

etching off the insulation film on the first side of the semiconductor substrate; and

annealing the semiconductor substrate with the insulation film present on the second side of the semiconductor substrate.

2. A method for fabricating a semiconductor device according to claim 1, wherein

in the step of annealing the semiconductor substrate, the semiconductor substrate is heat-treated in a hydrogen-content atmosphere.

3. A method for controlling semiconductor fabrication including the step of forming a gate insulation film on a test semiconductor substrate and the step of testing the gate insulation film,

the method further comprising, before the step of forming the gate insulation film, the steps of:

forming an insulation film, covering a first side and a second side of the test semiconductor substrate;

etching off the insulation film on the first side of the test semiconductor substrate; and

annealing the test semiconductor substrate with the insulation film present on the second side of the test semiconductor substrate.

4. A method for controlling semiconductor fabrication including the step of forming a gate insulation film on a test semiconductor substrate and the step of testing the gate insulation film,

the method further comprising, before the step of forming the gate insulation film, the steps of:

forming an insulation film on a second side of the test semiconductor substrate; and

annealing the test semiconductor substrate with the insulation film present on the second side of the test semiconductor substrate.

5. A method for controlling semiconductor fabrication according to claim 3, wherein

in the step of annealing the test semiconductor substrate, the test semiconductor substrate is heat-treated in a hydrogen-content atmosphere.

6. A method for controlling semiconductor fabrication according to claim 4, wherein

in the step of annealing the test semiconductor substrate, the test semiconductor substrate is heat-treated in a hydrogen-content atmosphere.

7. A method for fabricating a semiconductor device comprising the steps of:

forming a second insulation film, covering a first side and a second side of a semiconductor substrate with a first insulation film formed on the second side;

forming a semiconductor film, covering the second insulation film on the first side and the second side,  
etching off the semiconductor film on the second side;

and

annealing the semiconductor substrate with the second insulation film on the second side of the semiconductor substrate.

8. A method for fabricating a semiconductor device comprising the steps of:

forming a first insulation film, covering a first side and a second side of the semiconductor substrate;

etching off the first insulation film on the first side of the semiconductor substrate;

forming a second insulation film, covering the first side and the second side of the semiconductor substrate;

forming a semiconductor film, covering the second insulation film on the first side and the second side;

etching off the semiconductor film on the second side;  
and

annealing the semiconductor substrate with the second insulation film present on the second side of the semiconductor

substrate.

9. A method for fabricating a semiconductor device according to claim 7, further comprising, after the step of etching off the semiconductor film on the second side and before the step of annealing the semiconductor substrate, the step of immersing the semiconductor substrate in a cleaning liquid.

10. A method for fabricating a semiconductor device according to claim 8, further comprising, after the step of etching off the semiconductor film on the second side and before the step of annealing the semiconductor substrate, the step of immersing the semiconductor substrate in a cleaning liquid.

11. A method for fabricating a semiconductor device according to claim 9, further comprising, after the step of etching off the semiconductor film on the second side and before the step of immersing the semiconductor substrate in the cleaning liquid, the step of scrub-cleaning the second side of the semiconductor substrate.

12. A method for fabricating a semiconductor device according to claim 10, further comprising, after the step of etching off the semiconductor film on the second side and before the step of immersing the semiconductor substrate in the cleaning liquid, the step of scrub-cleaning the second side of the semiconductor substrate.

13. A method for fabricating a semiconductor device according to claim 11, wherein

in the scrub-cleaning step, the second side of the

semiconductor substrate is scrub-cleaned by using a first cleaning liquid mixing ammonia, hydrogen peroxide and water, and a brush.

14. A method for fabricating a semiconductor device according to claim 12, wherein

in the scrub-cleaning step, the second side of the semiconductor substrate is scrub-cleaned by using a first cleaning liquid mixing ammonia, hydrogen peroxide and water, and a brush.

15. A method for fabricating a semiconductor device according to claim 9, wherein

in the step of immersing the semiconductor substrate in a cleaning liquid, the semiconductor substrate is immersed in a second cleaning liquid mixing ammonia, hydrogen peroxide and water.

16. A method for fabricating a semiconductor device according to claim 10, wherein

in the step of immersing the semiconductor substrate in a cleaning liquid, the semiconductor substrate is immersed in a second cleaning liquid mixing ammonia, hydrogen peroxide and water.

17. A method for fabricating a semiconductor device according to claim 7, further comprising, after the step of removing the semiconductor film from the second side and before the step of annealing the semiconductor substrate, the steps of:

forming an opening down to the second insulation film in the semiconductor film of the first side;

etching the second insulation film with the semiconductor film as a mask;

etching the semiconductor substrate with the second insulation film as a mask to form a trench in the semiconductor substrate; and

burying a third insulation film in the trench to form an element isolation region.

18. A method for fabricating a semiconductor device according to claim 8, further comprising, after the step of removing the semiconductor film from the second side and before the step of annealing the semiconductor substrate, the steps of:

forming an opening down to the second insulation film in the semiconductor film of the first side;

etching the second insulation film with the semiconductor film as a mask;

etching the semiconductor substrate with the second insulation film as a mask to form a trench in the semiconductor substrate; and

burying a third insulation film in the trench to form an element isolation region.

19. A method for fabricating a semiconductor device according to claim 17, wherein  
in the step of annealing the semiconductor substrate, the

semiconductor substrate is heat-treated in a hydrogen-content atmosphere, and

the method further comprises, after the step of heat treating on the semiconductor substrate, the step of forming a gate insulation film on the semiconductor substrate.

20. A method for fabricating a semiconductor device according to claim 18, wherein

in the step of annealing the semiconductor substrate, the semiconductor substrate is heat-treated in a hydrogen-content atmosphere, and

the method further comprises, after the step of heat treating on the semiconductor substrate, the step of forming a gate insulation film on the semiconductor substrate.